Title (en)
PAN-YEAST AUTONOMOUSLY REPLICATING SEQUENCE

Title (de)
SEQUENZ ZUR UNABHÄNGIGEN VOLLHEFE-REPLIKATION

Title (fr)
SÉQUENCE À RÉPLICATION AUTONOME FONCTIONNANT DANS UN LARGE SPECTRE DE LEVURES

Publication
**EP 2959001 A4 20160210 (EN)**

Application
**EP 14754495 A 20140225**

Priority
• US 201361769085 P 20130225
• US 201361784975 P 20130314
• US 201361868749 P 20130822
• US 2014018446 W 20140225

Abstract (en)
[origin: WO2014131056A1] A DNA sequence that functions as an origin in many different yeast species. From 1 to 17 mutations can be introduced into this sequence to improve its function across multiple yeasts. The resulting synthetic DNA sequence confers stable plasmid replication function in all yeast species tested, including but not limited to Saccharomyces cerevisiae, Lachancea kluyveri, Kluyveromyces lactis, Kluyveromyces wickerhammii, Hansenula polymorpha, and Pichia pastoris. Also provided are sequences that function as an optimal origin in the industrially useful Pichia pastoris.

IPC 8 full level
**C12N 15/113** (2010.01); **C12N 1/19** (2006.01); **C12N 15/63** (2006.01); **C12N 15/67** (2006.01); **C12N 15/81** (2006.01)

CPC (source: EP US)
**C12N 15/69** (2013.01 - EP US); **C12N 15/81** (2013.01 - EP US); **C12N 15/815** (2013.01 - EP US)

Citation (search report)
• [X] J MEYER ET AL: "Galactokinase encoded by GAL1 is a bifunctional protein required for induction of the GAL genes in Kluyveromyces lactis and is able to suppress the gal3 phenotype in Saccharomyces cerevisiae.", MOLECULAR AND CELLULAR BIOLOGY., vol. 11, no. 11, 1 November 1991 (1991-11-01), US, pages 5454 - 5461, XP055219859, ISSN: 0270-7306, DOI: 10.1128/MCB.11.11.5454
• [X] DATABASE EMBL [online] 4 February 1992 (1992-02-04), "Kluyveromyces lactis galactokinase (GAL1) gene, complete cds.", XP002750737, retrieved from EBI accession no. EM_STD:M74508 Database accession no. M74508
• [XP] LIACHKO IVAN ET AL: "An autonomously replicating sequence for use in a wide range of budding yeasts", FEMS YEAST RESEARCH, vol. 14, no. 2, March 2014 (2014-03-01), pages 364 - 367, XP002750738
• See references of WO 2014131056A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
**WO 2014131056 A1 20140828**; EP 2959001 A1 20151230; EP 2959001 A4 20160210; EP 2959001 B1 20170419; US 2016002647 A1 20160107; US 9670495 B2 20170606

DOCDB simple family (application)
**US 2014018446 W 20140225**; EP 14754495 A 20140225; US 201414770074 A 20140225